



Best oral presentation: Whole pelvic radiotherapy versus prostate only in patients with intermediate, high and very high risk prostate cancer according NCCN criteria treated with radical intention: Recap data base

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Purpose/objectives. To compare the results in term of biochemical disease-free survival (BDFS), disease free survival (DFS), overall survival (OS) and toxicity in patients (pts) with prostate cancer (PCa) with at least a 15% likelihood of lymph node involvement treated with whole pelvic radiotherapy (WPRT) or prostate-only radiotherapy (PORT) using a Spanish prostate data base (RECAP). **Materials/methods.** Multicenter retrospective comparative study of 1843 pts with intermediate, high and very high risk PCa according NCCN criteria without nodes invasion, treated with radical radiotherapy to pelvis (885) or prostate only (958) using RECAP data base (August 1993–September 2009). Baseline characteristic of WPRT vs PORT differed significantly in age, initial PSA, Gleason, Tumor stage, total radiation dose, and number of pts treated with androgen deprivation therapy (ADT) and duration of ADT. Phoenix definition was used for biochemical failure. Kaplan–Meier curves have been used for the statistical analysis of survival and the long-rank test for the comparison of the survivals. Prognostic factors such as age, tumor stage, Gleason score and ADT have been related to BDFS, DFS and OS using Cox regression. Treatment-related toxicity was assessed using Radiation Therapy Oncology group and the National Cancer Institute's Common Terminology Criteria for Adverse Events guidelines.

Results. The median follow-up was 83 month for WPRT and 79 months for PORT. WPRT patients had more advanced and aggressive disease at baseline ($p < .0001$). The 10-year BDFS, DFS and OS for WPRT were 54%, 72% and 72% respectively and for PORT were 59% ($p = 0.86$), 90% ($p = 0.0007$) and 79% ($p = 0.22$) respectively. Patients undergoing WPRT had increased acute genitourinary ($p < 0.0001$) and gastrointestinal toxicity ($p < 0.0001$), and late genitourinary ($p = 0.02$) and gastrointestinal toxicity ($p = 0.03$).

Conclusion. According to our results WPRT was not associated with an improvement in BDFS, DFS and OS and results in a greater incidence of acute and late toxicity.

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3T functional MRI in prostate cancer: Clinical implications

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Introduction. 3T functional (diffusion-weighted and dynamic contrast enhanced) magnetic resonance imaging (MRI) has been proved useful in the management of prostate cancer. However, in clinical practice, it's not universally used.

Objectives. To evaluate in how many patients, the staging by 3T functional MRI changed our treatment.

Methods. Between January 2009 and December 2012, 143 patients were evaluated (104 patients were treated with radical radiotherapy (RT) and 39 received postoperative RT). 3T functional MRI was performed after transrectal ultrasound (TRUS) guided biopsy and before starting RT. We defined three recurrence risk groups according to outcomes of MRI and following the National Comprehensive Cancer Network (NCCN) criteria. We change the radiation treatment (planning target volume (PTV) and doses) and hormonal therapy (HT) by MRI findings.

Results. Radical RT: MRI detected prostate tumor in 98% of patients. By digital rectal examination (DRE) and TRUS the tumor was evident only in 24% of patients. In 67.3% of patients of the MRI results agreed with TRUS guided prostate biopsy performed previously. In 25% of patients there was a change in the risk group of recurrence based on the outcomes of MRI. 19.2% low risk patients became intermediate risk and 4.8% intermediate risk became high risk. One patient, who was initially included in low

risk group, finally became a high risk patient. There was a change in PTV and RT dose in 19.2% of patients. Based in MRI findings, we changed the decision of treating with HT in 11.5% of patients. Postoperative RT: 33.3% pelvic relapses were diagnosed with MRI, which influenced the decision of treatment. In summary, MRI significantly influenced our clinical practice, changing our treatment in 31.7% of patients.

Conclusion. 3T functional MRI provides an optimal staging for prostate cancer. Its routine use might represent significant changes in the management of such patients.

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Adapted dose escalation 3D-conformal external beam radiation therapy (3DC-EBRT) for localized prostate cancer (PCA) patients (PTS): 10-year results



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Purpose/objectives. Higher radiation dose levels have been shown to be associated with improved tumor-control outcomes in localized PCa pts. We previously (SEOR, 2007) presented our preliminary results of escalating doses with 3Dc-EBRT in localized PCa pts. The aim of this study is to updated long-term results and to identify predictors of biochemical, local control, survival and toxicity outcomes for pts with clinically localized PCa treated with escalating 3Dc-EBRT.

Methods/materials. From 2003 to 2005 a total of 339 pts diagnosed with cT1–T4 localized PCa were analyzed. Prescription dose to prostate was 72 Gy for low, 74 Gy and 6 months of androgen deprivation therapy (ADT) for intermediate, and 76 Gy (46 Gy to pelvis) and 2-year of ADT for high-risk. Factors associated to biochemical, local control, survival and toxicity were analysed. Estimates of survival were determined using Kaplan–Meier methods. Unadjusted and adjusted hazard ratios were calculated using the Cox regression model.

Results. Mean age was 70 years (range 56–84 years). Pts were staged as low, 60 pts (18%), intermediate, 102 pts (30%) and high-risk 177 pts (52%). A total of 254 pts (75%) received ADT, and 149 pts (44%) received pelvic radiation. Mean rectal and bladder doses were 49.8 Gy and 44.6 Gy, respectively. Rectal and bladder constraints (Vr50 and Vb50) were not met in 17% and 34%, respectively. Biochemical failure (Phoenix definition) was observed in 7 pts (12%) for low, 10 pts (10%) for intermediate, and 30 pts (17%) for high-risk. With a median follow-up of 7.28 years (range 1.4–15 years), the 10-year OS and BRFS was 79% and 80%, respectively. The 10-year BRFS for low, intermediate and high-risk group was 77%, 87% and 76.5% ($p > 0.05$). On multivariate analysis, initial PSA 10–20 ng/ml ($p = 0.003$), Gleason score ≥ 7 ($p = 0.001$), and nadir PSA > 0.5 ng/ml post-RT ($p = 0.002$) were strongly associated with biochemical failure. On multivariate analysis, time to relapse < 24 months ($p = 0.001$) were associated with worse OS. On multivariate analysis, Gleason score $3 + 4/4 + 3$ ($p = 0.003$) and time to relapse < 24 months ($p = 0.001$) were associated with death due to PCa. There were not observed any grade 4 or 5 rectal or bladder toxicities (CTCv3).

Conclusions. At 10-year, adapted dose escalation 74 Gy and 76 Gy 3Dc-EBRT were consistently associated with high biochemical control and overall survival in intermediate and high-risk PCa pts. Higher Gleason score ≥ 7 , nadir psa > 0.5 ng/ml post-RT, time to relapse < 24 months are strong predictors of biochemical failure, worse OS and increased death due to PCa.

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Combined radiotherapy in prostate cancer: Ten years outcomes

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Introduction. In prostate cancer (PC) higher biologically effective dose (BED) may be delivered with very conformal techniques like combined treatment with external beam radiotherapy (EBRT) and boost with high-dose-rate brachytherapy (HDR-BT).

Objectives. Analysis of our ten years experience with EBRT combined with boost with HDR-BT in PC.

Materials and methods. Between June 2002 to December 2011, 648 patients with localized PC were treated using EBRT and boost with HDR-BT. Median age 71 years. Classification by risk groups: 21 (3.1%) low, 337 (52.1%) intermediate and 290 (44.8%) high risk. All patients received EBRT to prostate and seminal vesicles (median dose of 57.68 Gy) and boost with HDR-BT (median dose of 9.73 Gy); 320 (49.4%) patients received elective pelvic radiotherapy. The median BED was 200.4 Gy. The median values for prostate volume was 27.32 cm³ and V100 = 93.3%. BT-planning was performed with tomography images in 347 (53.6%) and in real time with ultrasound images (Swift) in 301 (46.4%) patients. Androgen blockade 80.9% of patients. We analyzed predictive factors in relation with tumor (risk group, perineural invasion), implant (prostate volume, number of needles, V100) and treatment (duration, sequences, BED and planning with tomography vs Swift).

Results. With a median follow up of 61.1 months, the 5 and 10 years actuarial rates of biochemical failure free survival (BFFS) and disease free survival other than BFFS (DFS) were 86.6%/96.4% and 69.6%/72.6%. Rates of genitourinary acute and chronic toxicities